

REMARKS

Favorable reconsideration and allowance of the subject application are respectfully requested in view of the following remarks.

Summary of the Office Action

Claims 1, 2, 4-8 and 10-12 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Claims 1, 4, 5, 7, 10 and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Shin et al.* (U.S. Patent No. 6,086,443).

Claims 1, 2, 7, 8 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Nakahara et al.* (U.S. Patent No. 6,104,467) in view of *Shin et al.*

Although the Office Action does not explicitly include claim 6 in this 35 U.S.C. §103(a) rejection, the Office Action Summary, PTO Form 326, indicates that claim 6 as rejected. In addition, Applicant notes that the Office Action mentions claim 6 at page 5, line 19 as part of the 35 U.S.C. §103(a) rejection based on *Nakahara et al.* in view of *Shin et al.* Thus, Applicant assumes that the Office Action intends to reject claim 6 under 35 U.S.C. §103(a) as being unpatentable over *Nakahara et al.* in view of *Shin et al.* If Applicant's understandings and assumptions are inaccurate, further clarification is respectfully requested in the next official communication.

Summary of the Response to the Office Action

Applicant has amended claims 1 and 7 by this amendment. The amendments to claims 1 and 7 are supported, for example, by the discussion beginning at page 13, line 19 of the original

specification. Claims 13-17 have been newly added. New claims 13-17 are supported, for example, by FIGs. 5A and 5B. Accordingly, claims 1, 2, 4-8, and 10-17 are currently pending.

Claim Rejections Under 35 U.S.C. §112, First Paragraph

Claims 1, 2, 4-8 and 10-12 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. In particular, the Office Action asserts that the limitation wherein “the second heating process is sufficient to soften the seal material,” as set forth in independent claims 1 and 7 is considered new subject matter because this limitation is not disclosed in the original specification. Claims 2, 4-6 and 10-12 stand rejected because they depend on claims 1 and 7. The rejection is respectfully traversed for at least the following reasons.

For instance, as described beginning at page 12, line 10 of the specification, as originally filed, in “the present invention, a thermoplastic resin is employed as a seal pattern...the thermoplastic resin can be melted and solidified several times by applying thermal heat. (emphasis added)” Accordingly, Applicant respectfully submits that the original specification does reasonably convey to one skilled in the relevant art that applying thermal heat can melt thermoplastic resin, thereby softening the thermoplastic resin.

In addition, the original specification, at page 12, line 19, describes that “[t]he seal pattern 300 is made of the thermoplastic resin.” Further, the original specification discusses the first and second pressurizing and heating processes. Moreover, as described beginning at page 13, line 10 of the original specification, “[t]he second cell gap is adjustable in the pressurizing and heating process, so that it can be determined by design.” Accordingly, Applicant

respectfully submits that the original specification does describe the limitation wherein “the second heating process is sufficient to soften the seal material,” as set forth in independent claims 1 and 7, in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Therefore, it is respectfully submitted that the subject matter of independent claims 1 and 7 are fully supported by the original specification, and that independent claims 1 and 7 fully comply the requirements of 35 U.S.C. §112, first paragraph, and do not contain new subject matter.

Further, it is respectfully submitted that claims 2, 4-6, and 10-12 also fully comply the requirements of 35 U.S.C. §112, first paragraph, and do not contain new subject matter, for the similar reasons as independent claims 1 and 7.

Accordingly, Applicant respectfully requests that the rejection of claims 1, 2, 4-8, and 10-12 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Claim Rejections Under 35 U.S.C. §103(a)

Claims 1, 4, 5, 7, 10 and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Shin et al.* To the extent that this rejection might be applied to the claims as newly-amended, it is respectfully traversed as follows.

In paragraph 1, the Office Action asserts that the method of fabricating a liquid crystal display panel as taught by *Shin et al.*’s experiment 4 renders claims 1, 4, 5, 7, 10 and 11 unpatentable. However, Applicant respectfully submits that *Shin et al.* fails to teach or suggest the claimed combinations as set forth in independent claims 1 and 7, as newly-amended, including at least “wherein the second heating process is sufficient to soften the seal material, the second pressurizing and heating process applies a greater pressure and a higher temperature to

the first and second substrates than the first pressurizing and heating process, and the second cell gap is narrower than the first cell gap.”

The Office Action asserts that the hot press step of *Shin et al.* corresponds to the first pressurizing and heating process as set forth in Applicant’s independent claims 1 and 7, and that the end seal step of *Shin et al.*’s experiment 4 with P1/P2/P3 (0.7/1.0/0.9 kg f/cm²) corresponds to the second pressurizing and heat process as set forth in Applicant’s independent claims 1 and 7. However, as shown in FIG. 5, *Shin et al.* merely teaches that during the “hot press step, the two substrates 10 and 20 are aligned...and applied with uniform pressure and heat.” Column 4, lines 63-67 of *Shin et al.* Similarly, as shown in FIG. 6, *Shin et al.* merely teaches that during the end seal step, “pressure by seal plates 12...is applied to the outer surfaces of the two substrates 10 and 20 to make the substrates 10 and 20 to be flat.” Column 5, lines 40-43 of *Shin et al.* In contrast to Applicant’s claimed combinations as a whole, no portion of *Shin et al.*’s disclosure discusses that the pressuring of the seal plates (12) during the end seal step is coupled with a second heating process, as set forth in Applicant’s claimed combinations, or that the end seal step is performed at a higher temperature than the hot press step, as set forth in Applicant’s claimed combinations. Accordingly, Applicant respectfully submits that *Shin et al.* fails to teach or suggest the claimed combinations as set forth in independent claims 1 and 7, as newly-amended, including at least “wherein the second heating process is sufficient to soften the seal material, the second pressurizing and heating process applies a greater pressure and a higher temperature to the first and second substrates than the first pressurizing and heating process, and the second cell gap is narrower than the first cell gap.”

M.P.E.P. §2143.03 instructs that “[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490

F.2d 981, 180 USPQ 580 (CCPA 1974).” Since, in view of the above, *Shin et al.* fails to teach or suggest each and every element set forth in independent claims 1 and 7, it is respectfully submitted that *Shin et al.* does not render claims 1 and 7 unpatentable. Further, since claims 4, 5, 10 and 11 depend from claims 1 and 7, it is respectfully submitted that *Shin et al.* also does not render claims 4, 5, 10 and 11 unpatentable. Accordingly, withdrawal of the rejection of claims 1, 4, 5, 7, 10 and 11 under 35 U.S.C. §103(a) is respectfully requested.

Nakahara et al. in view of *Shin et al.*

Claims 1, 2, 6, 7, 8 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Nakahara et al.* in view of *Shin et al.* To the extent that this rejection might be applied to the claims as newly-amended, it is respectfully traversed as follows.

Applicant respectfully submits that *Nakahara et al.* and *Shin et al.*, whether taken alone or in combination, fail to teach or suggest the claimed combinations as set forth in independent claims 1 and 7, as newly-amended, including at least “wherein the second heating process is sufficient to soften the seal material, the second pressurizing and heating process applies a greater pressure and a higher temperature to the first and second substrates than the first pressurizing and heating process, and the second cell gap is narrower than the first cell gap.”

As acknowledged by the Office Action, *Nakahara et al.* fails to disclose performing a second pressurizing and heating process on the first and second substrates to form a second cell gap, wherein the second heating process is sufficient to soften the seal material and the second cell gap is narrower than the first cell gap. See page 6, lines 14-17 of the Office Action. Thus, the Office Action relies on *Shin et al.* as allegedly remedies the deficiencies of *Nakahara et al.* in this regard. In particular, the Office Action asserts that the end seal step of *Shin et al.*’s experiment 4 with the pressures P2/P3 (1.0/0.9 kg f/cm²) at time periods T3 and T4 corresponds

to the second pressurizing and heat process as set forth in Applicant's independent claims 1 and 7. However, as shown in FIG. 6, *Shin et al.* merely teaches that during the end seal step, "pressure by seal plates 12...is applied to the outer surfaces of the two substrates 10 and 20 to make the substrates 10 and 20 to be flat." Column 5, lines 40-43 of *Shin et al.* In contrast to Applicant's claimed combinations as a whole, no portion of *Shin et al.*'s disclosure discusses that the pressuring of the seal plates (12) during the end seal step is coupled with a second heating process, as set forth in Applicant's claimed combinations, or that the end seal step is performed at a higher temperature than the hot press step, as set forth in Applicant's claimed combinations. Accordingly, Applicant respectfully submits that *Shin et al.* fails to teach or suggest the claimed combinations as set forth in independent claims 1 and 7, as newly-amended, including at least "wherein the second heating process is sufficient to soften the seal material, the second pressurizing and heating process applies a greater pressure and a higher temperature to the first and second substrates than the first pressurizing and heating process, and the second cell gap is narrower than the first cell gap."

Since, in view of the above, *Nakahara et al.* and *Shin et al.*, whether taken alone or in combination, fail to teach or suggest each and every element set forth in independent claims 1 and 7, it is respectfully submitted that *Nakahara et al.* in view of *Shin et al.* do not render claims 1 and 7 unpatentable. Further, since claims 2, 6, 8 and 12 depend from claims 1 and 7, it is respectfully submitted that *Nakahara et al.* in view of *Shin et al.* also do not render claims 2, 6, 8 and 12 unpatentable. Accordingly, withdrawal of the rejection of claims 1, 2, 6-8 and 12 under 35 U.S.C. §103(a) is respectfully requested.

New Claims 13-17

Applicant has added new claims 13-17 to differently define the present invention.

Applicant respectfully submits that claims 13-17 are allowable at least because none of the applied references teaches or suggests the claimed combination as set forth in independent claim 13 including at least "performing a second pressurizing and heating process on the first and second substrates after the injection of the liquid crystal material, such that the seal pattern is set to a second height, thereby forming a second cell gap, wherein the second height is smaller than the first height."

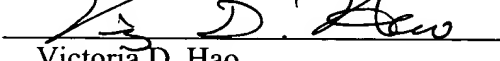
Conclusion

In view of the foregoing, withdrawal of the rejections and allowance of the pending claims are earnestly solicited. Should there remain any questions or comments regarding this response or the application in general, the Examiner is urged to contact the undersigned at the number listed below.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,
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